



University of Toronto Quality Assurance Process (UTQAP) Cyclical Review: Final Assessment Report & Implementation Plan

Program(s):	Biodiversity, Ecology & Evolution, B.Sc., Hons: Specialist and Major Biology, B.Sc., Hons: Major and Minor Cell and Molecular Biology, B.Sc., Hons: Specialist and Specialist Co-op Human Biology, B.Sc., Hons: Specialist and Major Applied Microbiology, B.Sc., Hons: Specialist (Joint) - with Centennial College Integrative Biology, B.Sc., Hons: Specialist Paramedicine, B.Sc., Hons: Specialist (Joint) - with Centennial College
Division/Unit:	Department of Biological Sciences, UTSC
Commissioning Officer:	Vice Principal and Dean, UTSC
Reviewers (Name, Affiliation):	<ol style="list-style-type: none"> 1. Dr. Stanley Boutin, Professor, Department of Biological Sciences, University of Alberta 2. Dr. Carl J. Douglas, Professor, Department of Botany, University of British Columbia 3. Dr. Donald Hine Edwards, Jr., Professor, Neuroscience Institute, Georgia State University
Date of review visit:	December 19 to 20, 2011
Date reported to AP&P:	April 3, 2012

1 Outcome

- The Committee on Academic Policy and Programs (AP&P) concluded that the Decanal response adequately addressed the review recommendations

2 Significant Program Strengths

- Outstanding commitment to providing laboratory and experiential learning opportunities
- High levels of student satisfaction
- Thoughtful combination of programs that respond to students' needs

- Research success of the faculty
- High morale of staff, faculty, and students

3 Opportunities for Program Improvement and Enhancement

The reviewers recommended that the following be considered:

- Highlighting distinct areas of strength to assist with recruitment
- Enhancing the quantitative and computational aspects of biological science to develop skills in the organization and management of large data sets
- Expanding participation in the co-op program
- Delivering several large enrolment courses in web-based format
- Addressing space challenges (especially laboratory space)

4 Implementation Plan

The Dean undertook in consultation with the Department to support the following changes:

- Immediate Term (6 months)
 - Highlighting distinct areas of strength to assist with recruitment
 - The Department, concurring with the reviewers' identification of Environmental Change and Human Biology as two distinct areas for recruitment, has launched a new major program in human biology to complement the existing specialist program, with overwhelmingly positive response; the recently launched biodiversity, ecology and evolution major and specialist programs build on the Environmental Change area
 - The Department is highlighting two additional areas of strength: Cell and Molecular Biology, which has a distinctive and successful co-op component, and Joint Programs, specifically Paramedicine and Applied Microbiology, offered with Centennial College
 - Enhancing the quantitative and computational aspects of biological science
 - All of the Department's undergraduate specialist programs already require courses in mathematics, physics, statistics and computer science, which provide a strong foundation in quantitative thinking
 - Many of the Department's biology courses already incorporate computational approaches
 - Delivering large enrolment courses in web-based format
 - The Department already has several large courses in which live lectures are subsequently posted online, or which have web-only sections
- Medium Term (1-2 years)
 - Enhancing the quantitative and computational aspects of biological science
 - The Department has begun to tailor several existing courses to include more quantitative approaches
 - Expanding participation in the co-op program
 - The Department and Dean will determine whether appropriate employer partners can be found to support a co-op option in the biodiversity, ecology and evolution program
 - Delivering several large enrolment courses in web-based format

- The Department is considering delivering one section of each of the two large first year biology courses in a web-only format, and delivering the second section of those courses using a “live lecture” format, allowing students a choice of delivery formats
 - Addressing space challenges
 - The Dean is considering the Department’s proposal to re-purpose an existing common-use classroom to relieve the shortage of teaching lab space
- Longer Term (3-5 years)
 - Highlighting distinct areas of strength to assist with recruitment
 - The Department has identified Environmental and Stress Biology as its focus for the recruitment of students and faculty at the graduate level. This focus informs the Department’s five-year faculty complement plan as well as ongoing efforts to establish an environmental and stress biology concentration within the existing environmental science PhD program, and to develop a new professional MSc program in conservation and biodiversity including a focus on urban conservation
 - Enhancing the quantitative and computational aspects of biological science
 - The Department’s five-year faculty complement plan includes the hiring of a computational biologist
 - Addressing space challenges
 - The Dean has identified a new Science Building as the highest-priority infrastructure project for the campus

The Dean’s Office will follow up annually with the unit on these plans to assess progress.

5 Executive Summary

The reviewers identified the programs’ strengths as outstanding commitment to providing laboratory and experiential learning opportunities; high student satisfaction; thoughtful and responsive combination of program offerings; faculty research success; and high department morale. The reviewers recommended that the following issues be addressed: program branding, quantitative and computational course content, online delivery, co-op expansion, and space to support research and teaching. The Department is highlighting four areas of strength to assist with undergraduate student recruitment and has launched a new major program in human biology to support one of those areas. Several courses are being revised to increase the emphasis on quantitative approaches. In addition, existing biology courses incorporate computational approaches and all specialist programs require courses that provide a strong foundation in quantitative thinking; the Department also plans to hire a computational biologist to support these approaches in the next five years. The Department is considering a web-only option for large introductory biology courses; several large lectures currently post live lectures online. The Department is exploring additional employer partnerships to support a co-op option in the biodiversity, ecology and evolution program. The Department has proposed partially alleviating the shortage of teaching lab space by re-purposing an existing classroom; a new Science Building is the highest-priority infrastructure project for the campus. The Committee on Academic Policy and Programs concluded that the Decanal response adequately addressed the reviewers’ recommendations.